

CALL SIGNS

Volume 4, Issue 1
Spring, 2013



*A Publication of the United States Naval
Aerospace Experimental Psychology Society*

Contents

- 1 MESSAGE FROM THE PRESIDENT**
- 2 AEROMED IN NAVY MEDICINE**
- 6 AEROMED IN MSC**
- 8 AERO OPTOMETRY**
- 10 AERO & OPERATIONAL PHYSIOLOGY**
- 12 AERO EXPERIMENTAL PSYCHOLOGY**
- 14 AEP HISTORY**
- 16 WHAT JR AEPS LOOK FOR IN LEADERS**
- 19 PASSING THE WINGS**
- 20 REFLECTIONS**
- 28 NEW AEPS**
- 29 FAREWELL LT FINDLAY**
- 30 BRAVO ZULU**
- 32 CALENDAR**

About the USN ★ AEP Society

As military transformation continues to affect today's and tomorrow's Department of Defense and the Navy Medical Service Corps, the need to promote the role of Aerospace Experimental Psychologists as leaders and innovators in aerospace psychology continues.

Naval Aerospace Experimental Psychologists offer a unique combination of education, knowledge, skills, and experiences to address current and emerging challenges facing the Navy, joint, and coalition environments.

The U.S. Naval Aerospace Experimental Psychology Society (USNAEPS) is an organization intent on:

- Integrating science and practice to advance the operational effectiveness and safety of Naval aviation fleet operators, maintainers, and programs
- Fostering the professional development of its members and enhancing the practice of Aerospace Experimental Psychology in the Navy
- Strengthening professional relationships within the community



AEP Community Specialty Leader
CDR Jim Patrey
NAWC-AD
james.patrey@navy.mil

USNAEPS Executive Committee



President
LCDR Chris Foster
NAMI
thomas.foster@med.navy.mil



Vice President
LCDR Tatana Olson
DFBA
tatana.m.olson.mil@mail.mil



Secretary
LT David Combs
NRL
david.combs@nrl.navy.mil



Treasurer
LCDR Wilfred Wells
NAMRU-Dayton
wilfred.wells@wpafb.af.mil



Membership Outreach
LT Lee Sciarini
NAWCTSD
lee.sciarini@navy.mil



Historian
LCDR Jeff Grubb
NAWCTSD
jefferson.grubb@navy.mil



Newsletter Editor
LT Stephen Eggan
NAMRU-Dayton
stephen.eggan@wpafb.af.mil



Co-Editor
LT Brennan Cox
NAMI
brennan.cox@med.navy.mil



Co-Editor
LT David Combs
NRL
david.combs@nrl.navy.mil

Message From The President

LCDR CHRIS FOSTER, USNAEPS PRESIDENT

The year that I have served as the President of the United States Naval Aerospace Experimental Psychology Society (USNAEPS) has been extremely busy. We meticulously updated our bylaws, which has enabled us to increase both Society membership and the role that the Society can play in the health of the AEP community. The Society recently sponsored a job placement center for AEP candidates resulting in 13 interviews and a number of strong candidates, three of whom are in the process of putting in packages. We also applied for (not an easy task) and are now awaiting final approval of our request for non-profit status, which will further expand our capability to support the AEP community, the aeromedical communities, Navy medicine, and the Navy and Marine Corps mission.

Call Signs provides a vital opportunity for the AEP Society to highlight the work done by Society members. This work is possible in large part due to cross-community collaboration, which is the norm for aeromedical officers (AOs). With this in mind, the theme of this issue is the Aeromedical Specialist and what they bring to the warfighter.

In this issue we are honored to have senior Medical Service Corps (MSC) leadership share their perspectives on the role and importance of the AO communities. RADM Mittelman, Deputy Chief, Bureau of Medicine and Surgery and Deputy Surgeon General of the Navy, shares his thoughts in an interview with *Call Signs* Editor, LT Stephen Eggan. RDML Moulton, Deputy Chief, Medical Operations and Director, Medical Service Corps, met with LT David Combs to share his perspectives on the AO communities. In addition, the Specialty Leaders of the three MSC AO communities – Naval Aerospace Optometry (AsO), Naval Aerospace & Operational Physiology (AOP), and Naval Aerospace Experimental Psychology (AEP) – discuss their mission and how it is enabled through both the specialized training they receive as AOs and effective interaction across communities. CDR Whitwell and LCDR Gao discuss the AsO community, CAPT

Hebert talks about the AOP community, and CAPT Schmorow and CDR Patrey provide an article for the AEP community. These articles illustrate the unique role each community brings to the Navy and highlight success stories of how the close ties across AO communities has enabled key accomplishments by leveraging the capabilities of each community.

Common across these interviews and community articles is the message that the AO communities remain integral in supporting national strategic objectives through the work we do for our nation's warfighters. We are essential for overseeing the selection of aviation candidates (e.g., Aviation Selection Test Battery, Selection for UAS Personnel), ensuring that aviators meet the necessary physical and medical requirements through screening, training, and provision of the necessary equipment (e.g., color vision testing, survival training), and conducting both basic and applied research to ensure that our aviators are prepared and equipped for the missions of today and tomorrow (e.g., ROBD, LASIK, NVGs).

In this issue, we also commemorate the turning over of AEP Specialty Leader (SL) duties through a series of articles that highlight the history of the AEP community, discuss what our members view are the roles and responsibilities of the AEP SL, tell the tale of the passing of the wings, introduce our new SL, CDR Jim Patrey, and highlight the career of our outgoing SL, CAPT Dylan Schmorow, who will be retiring this summer after leading the AEP tribe for the past four years. Finally, we introduce the newest AEPs, say goodbye to LT Findlay, and share some Bravo Zulus.

As always, I want to give special thanks to the *Call Signs* editorial board, LT Stephen Eggan, LT Brennan Cox, and LT David Combs for their hard work in putting together this edition.



RADM Michael Mittelman: The Role and Importance of Aeromedical Communities in Navy Medicine

**RADM MICHAEL MITTELMAN, DEPUTY CHIEF, BUREAU OF
MEDICINE AND SURGERY AND DEPUTY SURGEON GENERAL OF
THE NAVY**

INTERVIEW BY LT STEPHEN EGGAN

A native of Long Beach, N.Y., Rear Adm. Mittelman earned a Bachelor of Arts degree from Jacksonville University in 1975. He was awarded his Doctor of Optometry degree from the Pennsylvania College of Optometry in May 1980, and earned a Master of Public Health degree from the University of Alabama at Birmingham in 1990. He graduated from the Naval War College non-resident program in 1991. In 2009, Mittelman was awarded an Honorary Doctorate degree from Salus University and, in 2010, he received an Honorary Doctorate degree from Southern College of Optometry.

Mittelman was commissioned in the Navy Medical Service Corps in 1980. His first clinical assignment was at Naval Hospital, Marine Corps Air Station Cherry Point, N.C. from July 1980 to September 1984, serving as a staff optometrist and later as head of the Optometry Department. From September 1984 to August 1987 Mittelman served as head, Optometry Department, U.S. Naval Hospital, Rota, Spain. Mittelman then transferred to the Naval Aerospace Medical Institute, Pensacola, Fla., where he served as head, Optometry Department and became the first optometrist designated as an Aerospace Optometrist in 1989. In 1993, Mittelman assumed the duties of deputy director of Research at the Naval Aerospace Medical Research Laboratory, Pensacola. He then reported to Naval Hospital Great Lakes, Ill., in October 1995 where he held the position of head, Recruit Medicine Department and also served as the commanding officer of Fleet Hospital Three. In July 1997, Mittelman assumed command of the Naval Ophthalmic Support and Training Activity, Yorktown, Va. While there, he facilitated the establishment of the Department of Defense Optical Fabrication Enterprise. In July 2000, Mittelman assumed command of U.S. Naval Hospital Okinawa, Japan. Following this assignment, Mittelman served as the executive assistant to the Surgeon General of the Navy until August 2004 after which he was assigned as a special assistant to the Surgeon General at Headquarters, U.S. Marine Corps. He then served as the deputy chief of staff, Human Resources, Bureau of Medicine and Surgery through September 2008. Mittelman served as the director, Medical Resources, Plans and Policy Division (N931) Office of the Chief of Naval Operations from August 2007 to September 2008 and served as the 15th director of the Medical Service Corps from August 2006 to October 2009. Mittelman then served as the command surgeon U.S. Joint Forces Command and medical advisor to the Commander, Supreme Allied



Command for Transformation (NATO) from November 2009 to August 2010. Prior to reporting to his current assignment, Mittelman served as the Command Surgeon, U.S. Pacific Command. In November 2011, Mittelman reported as Deputy Surgeon General of the Navy and Deputy Chief, Bureau of Medicine and Surgery.

Mittelman is a fellow of the American College of Healthcare Executives and a diplomat of the American Academy of Optometry. He also is a member of the American Optometric Association and associate fellow of the Aerospace Medical Association. He is past president of the Armed Forces Optometric Society and recipient of their Orion Award.

Mittelman's awards and decorations include the Defense Superior Service Medal (2 awards), Legion of Merit Medal (5 awards), Meritorious Service Medal (3 awards), Navy and Marine Corps Commendation Medal (2 awards), Navy and Marine Corps Achievement Medal, Meritorious Unit Commendation (2 awards), National Defense Service Medal, Global War on Terrorism Service Medal, Navy and Marine Corps Overseas Service Ribbon (5 awards), and the Navy Expert Pistol ribbon.

From a strategic perspective, how would you describe the missions of the aeromedical communities and their role in the overall vision for Navy Medicine, especially with regard to supporting naval aviation?

The aeromedical communities certainly support Navy Medicine directly, but I would say the support they provide is much broader than just to Navy Medicine. The aerospace community is integral in supporting the larger national strategic objectives. If you think about what the Navy does as the forward away team for the country through our expeditionary strike groups, we are both the political and sometimes kinetic arm of the U.S. government. It is through the presence of the Navy, and in particular naval aviation, that the U.S. is able to support its allies and partners and to protect our assets or the assets of our allies anywhere around the world when necessary. The Navy does that by helping to maintain the stability of different areas of the world, keeping the sea lanes open, and

maintaining strong economic ties throughout the world, thus supporting the U.S. strategy.

The aeromedical communities fit into that strategy by taking care of the most important aspect, in my opinion, of that chain – the human weapon system. It is our job to first ensure that we are selecting the right people to come into the aviation pipelines. For example, the Aerospace Experimental Psychology (AEP) community has been involved in developing and refining over the years the Aviation Selection Test Battery (ASTB), which is now a pretty fine science. We also make sure that the physical requirements necessary for aviation are met, which is carried out at the Naval Aerospace Medical Institute (NAMI). Then it is our job to make sure that they are medically ready at all times. It is important to note that the definition of medically ready today is quite different than when I started. At that time, we thought an individual was medically ready if they had good eyesight and hearing, they could sit in an ejection seat, all their muscles and limbs moved the way they were supposed to, and they had no arrhythmias. Today, medically ready involves considering a much broader view of the human. Now we make sure that our people have good overall wellness and health, which includes mental health – we are looking at their physiological and psychological well-being, which is a little bit more encompassing than when I came into the community years ago.

That's our job. Sometimes our job is easy because we are helping people get back into the saddle, but sometimes that job is more difficult because we have to tell people that they can no longer sit in the saddle. That, at least for me, has been the hardest part of the job we do in aerospace medicine. However, if we were not there to support the warfighter in the manner in which we do, the Navy and Marine Corps would not have the cadre of high quality aviators that we currently have today, and we certainly would not be able to sustain that inventory into tomorrow.

In your view, what are some major accomplishments within Navy Medicine that can be attributed to aeromedical community efforts? Can you elaborate on any examples of successful cross-community partnerships that you have experienced during your time as an Aerospace Optometrist?

The aeromedical communities have contributed countless successes to Navy Medicine. One such success story relates to the evolution of the ASTB. Originally a simple pencil and paper test, the AEP community has been instrumental in developing the ASTB into the current computer-adaptive test, which is now the primary tool for selecting candidates into naval aviation training.

The vision work that the Aerospace Optometrists (AsOs)

and Aerospace and Operational Physiologists (AOPs) have performed through unaided and aided night vision training has saved a lot of lives and has been a great success. Recent efforts in spatial disorientation training and simulator sickness work, which all the aeromedical communities have had some role in developing, have also had significant positive impacts.

There are also the improvements made in water survival training, which is operated principally by AOPs. Before we were doing the helicopter dunker, if an H-53 or H-60 went down there was a 50/50 chance those onboard would survive. That number has markedly improved since we have begun this very specific water survival training, which started probably 30 years ago and has transformed into a real science today. This training, along with the development of other scenario based training, has saved countless lives and has been a great success.

Another place that aeromedical specialists have made an impact on safety is at the Naval Safety Center. We have had aeromedical specialists from most of the aerospace communities embedded in the Naval Safety Center and they have made huge impacts in hearing conservation, crew coordination, and human systems integration as we have moved forward with much more complex platforms. It is through our aeromedical experts working in the Safety Center and other places like the Office of Naval Research (ONR) that have really been able to make a difference by working closely with the Line and being able to explain to them how to train and then how to perform.

What do you see as some of the biggest challenges currently facing the medical community in continuing to support the warfighter, and how can the aeromedical communities best position themselves to meet those challenges?



The helicopter dunker is one of most infamous, and effective, aviation water survival training evolutions.

Our challenges are the same as those that the Line faces – resources. We have to figure out a way to train more efficiently, but at the same level of effectiveness that we are doing it today. We need to continue to attract and retain high quality people across all the aeromedical specialties whether it be our Flight Surgeons, RAMs, AOPs, AEPs, or AsOs. The enlisted community needs to be bolstered and maintained as well because they are the lifeblood of all the work that we do in Navy Medicine.

Our biggest challenge, however, is marketing our wares and educating the Line and resource sponsors about the tools that we as aeromedical specialists bring to the table. We have been doing this more effectively recently, but we need to continue to beat the drum and educate the Line about the importance of maintaining a robust aeromedical community because of the huge positive impacts we have across the Fleet and the Marine Corps.

Looking forward over the next 5-10 years, what do you see as the primary operational and research areas that aeromedical officers in general, and each specialty group in particular, should focus on?

I think we need to focus more closely on the domain of unmanned vehicles. In particular, we need research that will determine what individual characteristics are needed to work in unmanned environments because the unmanned environment requires a different skill set than that necessary for manned aviation. We then need to develop test batteries similar to the ASTB for selecting the best qualified people to be unmanned operators.

We will clearly always have manned weapons systems so we need to continue to make them safer by continuing to address relevant research gaps. For example, can we build a helmet that gives the necessary protection and hearing attenuation while at the same time making it half the weight so that G forces have less negative effects on aircrew? Can we build an oxygen system that is smart enough to recognize when it is not working properly so that if the system is malfunctioning it somehow tells the aviator that they are in danger of becoming hypoxic? Can instrumentation be refined so that if a pilot becomes spatially disoriented it can detect that state and provide appropriate tactile or visual cues so that the pilot can reorient before a mishap occurs? Or, could that detection system signal the aircraft to acquire a safe flight profile automatically?

There is also a lot of research that needs to be performed regarding fatigue and the use of psychotropic drugs and sleep medications. As we work with the pharmaceutical and pharmacological communities we need to research what the next generation of drugs might be that can safely



LCDR Tyler Miles, Aerospace Optometrist, talks to a patient about his eyesight while embarked aboard the multi-purpose amphibious assault ship USS Iwo Jima.

help enhance our performance. Along those lines we need to ask what types of things we should be doing with our aircrew that might enhance and sustain their physical and mental performance. For instance, are there exercise regimens, nutritional supplements, or mental exercises that people can do that can keep them performing at their best for as long as possible?

How has being an Aerospace Optometrist influenced your perspective as a leader throughout your career and now as Deputy Surgeon General in guiding your vision and direction for the SG's office?

I really believe that if I was not lucky enough to have had the opportunity to be part of the aeromedical community that I would not be sitting here today as the Deputy Surgeon General. I have learned so much from that community about leadership, about execution, about how to manage programs, and frankly, how to support the warfighter that I never would have learned as a straight clinician. This is one of the reasons that when I became the Corps Chief, one of my messages was that you cannot stay in the medical treatment facility (MTF) environment and gain an understanding what we really do in Navy Medicine. Some professions obviously do not lend themselves to going to the operational side and then coming back to the MTF, but if you have the opportunity to do so it is certainly encouraged and sometimes required to really gain an understanding of what the Navy and Marine Corps are really all about. I always tell people that if they are with the Marines go out and get dirty with them, if you are stationed at a Naval base go see what that ship looks like, if you are stationed at a Naval Air Station go get a hop on a jet. Fortunately, that is what I did when I was at a Marine Corps Air

Station and I got the “bug” and the rest is history. Doing those things is important because you gain credibility as a provider by having those experiences.

The proudest moment of my professional career was not when I put on my first star – it was when my daughter pinned on my Wings. That was the proudest moment of my professional career because I accomplished something and got to start something new for the Navy. You cannot put a price on the training that we get as aeromedical officers. Everybody gets something a little different out of that training depending on how they jump into it, but I personally got a lot out of it. I got a lot out of the systems approach to learning and of learning how to fly an airplane (I got to fly and land on an aircraft carrier, which was phenomenal), which really helped me to gain an appreciation for the importance of the work that we do in aerospace medicine.

As an AsO, I acquired an operational perspective, as well as an important joint perspective through working with the other services because nothing we do in the aeromedical community, including training, is done in a stove pipe in one service (for example, there were students from several different countries in my Flight Surgeon class). Those experiences helped to mold me early in my career – and the operational and joint perspectives I gained from the aeromedical community have served me well throughout my career, especially when I was the U.S. Pacific Command Surgeon, at NATO, and the U.S. Joint Forces Command Surgeon. Those experiences con-

tinue to shape the way I think about challenges, so the point of view that I bring to this leadership position is a very operational and joint perspective.

Sir, do you have any final thoughts that you would like to share in closing?

I am honored that someone is asking me questions about the role and importance of aeromedical communities. Any given day my answers might be a little bit different, but the theme is the same. That theme is that the work that we do as aeromedical specialists, while it is often underrated and certainly often times unrecognized, is always important. I do not think that our civilian counterparts really understand the effects that we have on people whether it is direct or indirect.

As Naval Officers, we are charged with a special mission, but I think as Naval Medical Officers we have a very unique charge, unlike any of the other services. We do carrier aviation and undersea medicine and are responsible for ensuring that those Sailors and Marines that we are sending into harm’s way are ready to go at any time. If they do get broken, we fix them in a manner that is second to none. At the same time we are caring for their families, and if we do not do that well our warfighters are not going to be ready to perform. That makes the work that we do in Navy Medicine very gratifying, but also extremely important to our national security, and I do not think you can underestimate the effects of that.



The USS Dwight D. Eisenhower (CVN 69).

RDML Terry Moulton: The Role and Importance of Aeromedical Communities in the Medical Service Corps

RDML TERRY MOULTON, DEPUTY CHIEF, MEDICAL OPERATIONS
AND DIRECTOR, MEDICAL SERVICE CORPS, BUREAU OF
MEDICINE AND SURGERY, WASHINGTON, D.C.

INTERVIEW BY LT DAVID COMBS

A native of Nashville, Tenn., Rear Adm. Moulton earned his Bachelor of Science degree in Health Care Administration from Western Kentucky University and a master's in Business Administration from Chaminade University in Honolulu. Moulton is also a graduate of the Naval War College non-resident program.

Moulton received his commission as an ensign in the Medical Service Corps in 1983. He attended Officer Indoctrination School in Newport, R. I., where, upon completion, he received the school's leadership award. His first assignment was at Naval Hospital, Philadelphia, where he served as the head of Operating Management and Patient Administration departments. In 1985, he reported to the Naval Medical Clinic, Pearl Harbor, where he served in a variety of administrative roles and eventually served as the clinic director, Naval Air Station, Barbers Point, Hawaii. In 1989, he assumed duties as the Medical administrative officer, USS Nimitz (CVN 68) where he completed his assignment after a six-month deployment to the Persian Gulf in support of Operation Desert Storm. Following deployment, he served as the Navy Postgraduate Administrative fellow at the American Hospital Association in Washington, D.C. In 1993, he reported to the Bureau of Medicine and Surgery where he served in the Coordinated Care Division and later as the executive assistant to the Assistant Chief for Plans, Analysis, and Evaluation. In 1995, he was assigned as the director for Administration at the U.S. Naval Hospital, Guantanamo Bay, Cuba during Operation Sea Signal. From January 1996 until June 1998, he served as the director for Administration, Naval Hospital Cherry Point, N.C. In 1998, he reported to the Bureau of Medicine and Surgery as the executive assistant to the Deputy Chief. From 2000 to 2002, he served as the director, Health Affairs for the Assistant Secretary of the Navy (Manpower and Reserve Affairs) at the Pentagon, Washington, D.C. In 2002, he transferred to the TRICARE Northwest Lead Agent Office as the chief of Healthcare Operations and was later selected as the executive director.

Selected for Executive Medicine, he served from 2005 to 2007 as the executive officer, Naval Hospital, Pensacola and commanding officer of the Fleet Hospital. From 2007 to 2009, Moulton served as the head, Naval Personnel Command's Medical Officer Distri-



bution Branch. From June 2009 to 2011, Moulton served as the commanding officer, U.S. Naval Hospital, Okinawa, Japan. Following this assignment, Moulton reported as the deputy director, Medical Resources, Plans, and Policy, Office of the Chief of Naval Operations. In November 2011, Moulton reported to the Bureau of Medicine and Surgery as the executive assistant to the Surgeon General of the Navy prior to assuming his current assignment.

Moulton is a fellow of the American College of Healthcare Executives and served as the Navy Pacific regent from 2000 to 2004. He also received the ACHE Governor's award in 2004 and the Regent's Sustained Contributions Award in 2005 and 2010.

Moulton was selected for promotion to rear admiral in March 2012.

Moulton's personal awards and decorations include the Legion of Merit, Defense Meritorious Service Medal, Meritorious Service Medal (six awards), Navy and Marine Corps Commendation Medal (four awards), Navy and Marine Corps Achievement Medal, and various other service and units awards and Surface Warfare Medical department officer qualification.

Sir, how would you describe the mission of the Medical Service Corps (MSC) aeromedical communities and their role within the broader MSC with regard to supporting naval aviation?

The missions that make up the MSC aerospace communities are vital for the warfighters that are at the tip of the spear. If you think about the Chief of Naval Operations (CNO) tenet of "Warfighters First," your communities, and really the MSC overall, prepare our warfighters for their missions, and you lay the groundwork for them to make adjustments where needed, particularly in regard to aviation safety. Your billets are typically stationed with the Line communities, and operational support provided by the MSC aerospace communities is vital to the conduct of their missions.

In your view, what are some major accomplishments within the MSC that are directly attributable to the aeromedical communities?

Since I have been the Chief of the Corps, I have had a chance to interact with CAPT Dylan Schmorow and the other aeromedical specialty leaders (SLs) and I enjoy seeing your briefs and proposals regarding unmanned systems and the research that is going on in that area. Clearly this is going to be the future in many ways. Your work in developing both proposals and conducting research on matters like selection tests, human systems integration tools, and anything to do with those systems (and obviously the manned systems as well) is really a major accomplishment for your community specifically, and I see that being a major element of your work going forward.

With regard to the Aerospace Optometrists and the Aerospace & Operational Physiology communities, both communities are critical in keeping our aviators in a good state of readiness both with regard to aviation physiology and aviation safety.

Really, all of the aeromedical specialties are directly aligned to the CNO's tenet "Warfighter First." At various times all of you are forward deployed and you all keep our Line warfighters ready.

In addition, your communities are critical for "Jointness" because you are where the Navy needs you and finding ways to be valuable across the board.

Sir, what do you see as some of the biggest challenges facing the MSC aeromedical community, and how can the aerospace specialties best position themselves to face these challenges going forward?

I think the aeromedical community as a whole is well positioned. I do not see the MSC, and in particular the aerospace specialties, downsizing too much in the future. Though, with budget constraints and uncertainties we will continue to have pressures. The focus will cause us to reshuffle our deck. I can see at some point, we will look at communities that are not directly tied to the warfighter and warfighter readiness and consider resizing those communities to make room for those directly tied to the readiness mission. In the aeromedical community, you are directly tied to warfighter readiness. In fact, Aerospace Optometry is a group we may be actually trying to grow.

Over the next five to ten years, what do you see as the primary operational and research areas that the



Unmanned aerial systems, such as the Puma pictured here, will be an area of focus among aeromedical communities over the next several years.

aeromedical community should probably be focused on? That is, what do you think is going to really be the hot topic for us?

We are really in a unique time. I see unmanned aerial systems being a major focus as this program continues to expand. This will drive our aeromedical communities to conduct research and develop a focus on these systems, especially with selection, training, and human systems. I think this is really the major focus. I know there is a proposal currently under consideration regarding unmanned systems selection.

In closing, do you have any final thoughts or pieces of advice for the Aeromedical communities?

Thank you for including me in your outstanding newsletter. As you know, I became the Chief of the MSC on 30 August 2012. I never imagined that I would serve as your Corps Chief. I am looking forward to learning more about each of the 31 specialties in the MSC, and I know the value and relevance of the MSC has never been stronger. Our Surgeon General values the MSC tremendously; we have a fantastic reputation within the medical community. We have the expertise needed in the Medical Department and our future is bright. Of course, we have challenges ahead, but we are here for the warfighter – and the aeromedical communities are really at the tip of the spear in supporting our warfighters, and I thank you all for what you do.

Thank you very much for your time, Sir. We sincerely appreciate you taking the time to contribute your personal perspectives.

Naval Aerospace Optometry

BY CDR KENNETH WHITWELL & LCDR HONG GAO

Vision readiness is a vital component of mission readiness for deploying units, as it maximizes the effectiveness of our Sailors, while increasing aviation and flight deck safety for the Sailors working on the deck or around our aviation assets.

Vice Adm. S.R. Van Buskirk.

HISTORY

Aerospace Optometry (AsO) is a relatively young program when compared to the other aeromedical communities. The origins of the AsO community began in 1989 when LCDR Michael Mittelman – now RADM Michael Mittelman and Deputy Surgeon General of the Navy – became the first Navy optometrist designated as an AsO. In 2002, the curriculum for the AsO training program was established at the Naval Aerospace Medical Institute (NAMI) in Pensacola, Florida. Students in the AsO program receive six months of joint academic training (in parallel with the other aeromedical officer programs), aviation preflight indoctrination (API), and flight training. Upon graduation, AsOs are pinned with the Medical Service Corps “Wings of Gold” and receive the additional qualification designation (AQD) of 6AN.

CURRENT MISSIONS IN SUPPORT OF NAVY MEDICINE & NAVAL AVIATION

As part of the aeromedical team, AsOs contribute significantly to mission effectiveness and safety-of-flight as aviation vision subject matter experts. In addition to performing regular eye examinations for pilots, aircrew and their families, AsOs routinely provide designated and applicant flight physical consults and optometric evaluations, serve as members of Local Boards of Flight Surgeons, and provide training to Flight Surgeons and squadron/battalion Corpsmen. Because AsOs are qualified for flight and can deploy with USMC units, they have the ability to deliver vision services while underway and deployed bringing vision readiness to the deck plate. AsOs’ knowledge of various military aircraft, survivability and life-saving equipment (such as ejection seats and specific breathing devices), aviation physicals and administrative processes, and potential risks in flight allows them to serve as immediate on-site aeromedical consultants who can greatly minimize aviator down-time, reduce travel



costs, and reduce medical evacuations due to eye trauma, infections, etc. Additionally, AsOs administer the Aviation Mission Essential Contact Lens Program, serve as specialty consultants for pre-operative and post-operative refractive surgery cases for aviators, and lead aviation vision science research, a few of which are highlighted below.

Current Trends in Color Vision Testing

Normal color vision is required for ratings within aviation, submarine, dive, and other operational communities. Research shows that approximately 8% of male and 0.5% of female populations are color deficient. In naval aviation, two color tests are acceptable – pseudo-isochromatic plates (PIP) and the Farnsworth Lantern (FALANT).

The PIP test is designed to pass only those with normal color vision and fails color vision deficient individuals. In contrast, the FALANT sometimes passes individuals with mild color vision deficiencies. The FALANT was developed in the late 1940s by Naval Submarine Medical Research Laboratory as an easy to use test to determine if Submariners had sufficient color vision to make accurate color judgments in fleet tasks. It uses simple red, green,

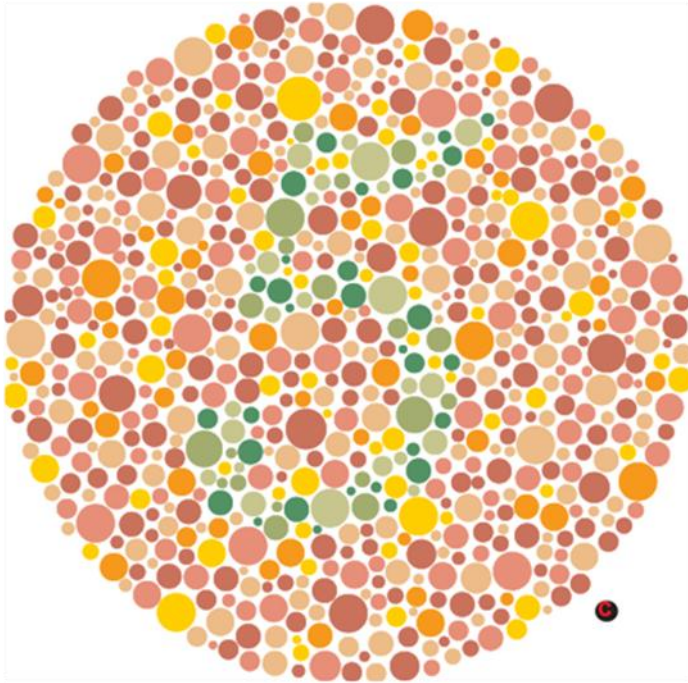


Illustration of a pseudo-isochromatic plate. Color deficient individuals cannot see the “5” embedded within the colored dot matrix.

and white color lights to mimic the basic navigation aids and displays in use at the time. Shortly thereafter, the FALANT was adopted for use in the aviation community. Unfortunately, research has shown many problems with the FALANT, including moderate or severe color deficient persons that can occasionally pass the FALANT, but fail the PIP.

Since the 1940s and '50s, color vision tasks have changed substantially throughout the fleet, including the aviation community. Color-coded, non-redundant multifunctional displays in use today utilize the full spectrum of colors, including a wide variety of shading and brightness factors. For example, the recent introduction of backlit LCD display technology in modern fighter (e.g., U.S. Air Force F 22 Raptor), and fighter-attack (e.g., U.S. Navy F/A-18E/F Hornet; F-35 Lightning II Joint Strike Fighter) aircraft has expanded the color palette of information displays. It is possible that color deficient individuals may experience varying degrees of color confusion errors or increased reaction time to tasks with a color skill component while using these types of displays. The type of color vision deficiency (red, green, or blue weak) and the severity of the color vision deficiency (mild, moderate, or severe) can influence an individual's color task performance. Reliably quantifying both type and severity of color vision defi-

ciency will be important for predicting human performance in this newer color-rich cockpit color-space; however, current color vision testing does not allow for these types of determinations.

Fortunately, AsOs – in a collaborative effort with Aerospace Experimental Psychologists (AEPs) – are part of ongoing research aimed at validating the next generation of color vision tests that will allow the determination of the type and severity of color vision deficiencies. These tests will standardize testing conditions and address current limitations in testing errors with respect to plate viewing time, lighting, etc. Information from these types of color vision tests can help aeromedical personnel make more accurate and informed decisions concerning human systems integration of color deficient personnel and aviation related color vision tasks, lead to improvements in mission effectiveness and safety, and reduce color vision screening costs.

EFFECTS OF OPERATIONAL FATIGUE ON DEPTH PERCEPTION

Modern military air combat missions increasingly depend on optimal human visual performance due to the complex nature of military operations. AsOs are collaborating with U.S. Air Force investigators to examine the effects of operational fatigue on depth perception, as part of a larger research effort that intends to generate data that will establish quantitative relationships between clinical vision tests and operational aircrew performance. The results may ultimately be used to guide aviation vision standards and should help improve a fatigue early detection/prediction system that would inform decisions on manning and mission readiness, thereby reducing the negative operational impact of fatigue.

SUMMARY

In its short history, the AsO community has increasingly contributed to aviation effectiveness and safety by serving as aviation vision subject matter experts across the spectrum of clinical, operational, and research fields relating to naval aviation. Because vision plays such a vital role in nearly every aspect of flight performance, AsO efforts play a significant role in reducing annual aviation mishap rates. As technology advances and visual environments change, AsOs will continue to play an integral role in guiding aviation standards and addressing research gaps.

Naval Aerospace & Operational Physiology

BY CAPT MATTHEW HEBERT

HISTORY

The roots of the Naval Aerospace & Operational Physiology (AOP) Program can be traced back before World War II, well before the establishment of the Medical Service Corps (MSC) in 1947. Technological advances in aviation, with the development of high performance aircraft operating at greater altitudes and speeds since World War I, saw the development of new equipment to enable aviators to function effectively. Most notably among those was the oxygen breathing apparatus.

In 1940, medical officers who recognized the dangers of hypoxia (or 'anoxia' as it was termed in those days) to aviators piloting high performance aircraft and the efficacy of pressured oxygen in high altitude flight urged the U.S. Navy to establish four low pressure training chambers. 'Altitude Training Units,' (ATUs) as they were termed, were designed to indoctrinate aviators and crewmen in the effects of high-altitude exposure and the use of oxygen breathing devices. Eight additional low pressure chambers (LPCs) were in operation by early 1943 and thousands of naval airmen were trained during World War II.

Other physiological aspects of naval aviation were of great concern during WWII; night blindness especially. Navy Medicine conducted research in the problems of night vision and developed night vision programs to provide aviators with indoctrination in dark adaptation and night vision techniques. Night vision training programs staffed by aviation physiologists were subsequently established at 35 Navy and Marine Corps aviation activities during the war.

The Naval Aviation Physiology Training Program stalled momentarily at the end of WWII. The rapid demobilization following the war saw the exodus of all but one of the Naval Aviation Physiologists. By 1948, only two ATUs were still in operation. However, naval aviation was rapidly moving forward, dramatized by the first jet-powered aircraft operating on the deck of the carrier USS Franklin D. Roosevelt in 1946. It became apparent to the Naval Bureau of Aeronautics and the Bureau of Medicine and Surgery (BUMED) that an integrated aviation physiology program staffed by professional physiologists was essential to the success of the naval aviation mission. Ac-



cordingly, commissioned naval physiologists were authorized by enabling legislation creating the MSC in 1947. As a result, four AOPs were onboard by 1948, with CAPT Mary Keener designated as AOP #1 on 1 Sep 1944. Indoctrination and training of AOPs expanded in union with advances in naval aviation; formal training in aviation physiology for newly assigned AOPs was commenced at the Navy School of Aviation Medicine at Pensacola in 1951. By 1960, 20 formal AOP designations had been awarded, qualified AOPs were accorded flight status in 1966, and a breast insignia modeled on flight surgeon's wings was authorized in 1967. By 1970 there were almost 60 designated AOPs serving in the Navy and today the Navy employs 100 designated AOPs.

Throughout our existence, Naval AOPs have contributed to the research, development, testing, and evaluation of aviation safety and protective equipment. For example, in the 1960's, AOPs expanded into aviation safety systems and began assisting with aircraft mishap investigations. Involvement in research at numerous naval research laboratories has led to the development of and improvements in low pressure chambers, ejection seat devices and simulators, and aviation life support systems (ALSS). Today, the unique skill sets and expertise of AOP officers continues to emphasize safety and operational effectiveness for all prospective and designated joint aeronautical personnel, selected passengers, project specialists, and other

authorized individuals in the aeromedical aspects of flight and survival.

CURRENT MISSIONS IN SUPPORT OF NAVY MEDICINE & NAVAL AVIATION

Currently, the Naval AOP Program is comprised of five major elements, each providing key support to the operational readiness of the Fleet. The first two elements are the Naval Aviation Survival Training Program (NASTP) and the Quality Assurance and Revalidation (QA&R) Program. The NASTP delivers instruction for initial and refresher aerospace physiology courses. Each training syllabus is specifically tailored to the Type/Model/Series of aircraft flown (broken down into 'Classes:' Rotary Wing, Fixed Wing non-ejection seat, and ejection seat aircraft categories). Instructors are specialized in the presentation of human factors and physiological threats related to the flight environment, physiological elements to enhance flight mission performance, mishap prevention, mishap and hostility survival, ALSS applications, and correct emergency egress and rescue procedures. Other items covered include noise, vibration, acceleration, spatial disorientation, and extreme heat and cold effects to the human body. AOPs are also integrally involved in instructing elements of water survival training. Both aviation physiology and water survival courses include didactic and 'hands-on' experiences, requiring each student to demonstrate competence in the topic of instruction. NASTP requirements are Chief of Naval Operations (CNO) directed, and BUMED is assigned as the US Navy's Training Agent (TA) for Aviation Survival Training. On average, the NASTP trains approximately 25,000 students annually. The QA&R Program provides a process of inspection and testing of NASTP training devices and equipment as well as equipment managed by the Naval Air Systems Command Training Systems Division Orlando, Florida.

The third major component of the Naval AOP Program, established in early 1990, is the Aeromedical Safety Officer (AMSO) program. To become an AMSO, AOPs must attend the Aviation Safety Officer (ASO) course in Pensacola, FL and become specialists in aircraft mishap investigation, laser safety, night vision devices, aviation safety, ALSS assessment, crew station compatibility, and mishap pre-planning and drills. The mission of AOPs assigned to AMSO billets is to work directly with the Navy and Marine Corps aviation communities as a technical liaison and provide them with specialized consultation, assistance, evaluations, and recommendations.



A student undergoing water survival refresher training at Aviation Survival Training Center, Miramar, awaits simulated rescue after boarding his life raft.

AMSOs also support the Fleet Air Introduction and Liaison of Survival Aircrew Flight Equipment (FAILSAFE) Program, the fourth element of the Naval AOP Program, which augments and facilitates the introduction of new and modified items of ALSS to Fleet aviation. FAILSAFE encompasses all facets of ALSS acquisition, including requirement identification, design research, development, testing and evaluation, and Fleet introduction, modifications, maintenance, training (maintainers and users), lifecycle support, and use.

The last element of our program is research, development, testing and evaluation (RDT&E) and is supported by efforts in the human performance, operational readiness, and survival equipment arenas. AOPs are detailed to facilitate research and evaluation required to meet operational requirements.

SUMMARY

Over the last 57+ years, AOPs have played an increasingly important and collaborative role in Navy Aeromedical programs – those shared with Aerospace Experimental Psychologists, Aviation Optometrists, and Flight Surgeons – involving education, training and the aviation safety arena of our aircrew. AOPs have made significant contributions to assure naval aircrew operational readiness through aeromedical safety channels. As technology improves and interests continue to push the outer limits of human performance, opportunities for Naval AOPs will continue to be prevalent.

Naval Aerospace Experimental Psychology

BY CAPT DYLAN SCHMORROW & CDR JIM PATREY

The origins of the Aerospace Experimental Psychology (AEP) community can be traced back to the days leading up to WWII, when the efforts of a dedicated group of officers including CAPT J. C. Adams, Head of BUMED's Aviation Medicine Division, CAPT J. R. Poppen, Head of the Bureau of Aeronautics' Medical Research Section, Reserve LTJG Eric Liljencrantz, and Dr. John G. Jenkins, first head of the BUMED Aviation Psychology Section, led a team conducting ground-breaking work in aviation personnel selection to address unacceptably high mishap and training failure rates. This effort necessitated the induction of a new group of psychologists, designated to serve in this capacity as active duty officers. On 26 Dec 1941, CAPT Alan Grinsted was commissioned as Naval AEP #1. At present, the AEP community has winged 148 additional officers. (More on the history of the AEP community can be read in the *History & Legacy* article, p. 14.)

CURRENT MISSIONS IN SUPPORT OF NAVY MEDICINE & NAVAL AVIATION

This vibrant community has never lost touch with its roots in aviation selection research, but the nature of the work conducted by AEPs has grown considerably broader since the inception of the community. AEPs have evolved into a multi-disciplinary community of uniformed scientists supporting the Navy and its sister services through research, applied work, and program management. Today, the scope of work AEPs perform includes, but is not limited to:

- Human Systems Science and Technology Program Management
- Human Factors Research
- Operational Neuroscience and Augmented Cognition
- Aviation Training Design & Policy Analysis
- Systems Acquisition
- Aviation Safety Research
- Virtual Environments, Simulation Design & Validation
- Unmanned Aerial Systems Research and Support, including Manning, Training, Simulation Requirements, Interface, Personnel Standards, & Systemic Autonomy
- Wounded Warrior Post-Traumatic Stress Disorder and Traumatic Brain Injury Research and Development
- Operational Medicine Research and Engineering

AEPs also occupy critical roles within the Department of Defense. Currently, AEPs serve as:



- Deputy Director, Human Performance, Training and BioSystems, Office of the Assistant Secretary of Defense (Research & Engineering)
- Program Director for Health Affairs/Advanced Development, Office of the Secretary of Defense (Health Affairs)
- Deputy Director, Office of Strategy Management, Defense Health Headquarters (M5)
- TeleHealth, Training, and Technology Program Manager, Defense Advanced Research Projects Agency
- Director, Warfighter Protection and Applications Division, Office of Naval Research (ONR)
- Division Deputy, Human and Bioengineered Systems, ONR
- Director, Aviation Warfare Integrated Product Team, PMA-205

As Medical Service Corps officers, AEPs have also maintained roles in operational medicine, to include program manager roles in Force Health Protection and in adversarial force modeling for ONR, as well as at the Defense Advanced Research Projects Agency in PTSD and Augmented Cognition. AEPs have also provided warfighter support in areas as broad as failure mode prediction modeling for the Littoral Combat Ship training application and predictions regarding populous uprisings in forward areas using Human Social and Cultural Behavior modeling. Arguably, however, our most important roles are those in which we add value to collaborative groups.

CROSS-COMMUNITY COLLABORATIONS

There are recent collaborations that are worth highlighting as they show not only the specialization and excellence of our respective communities, but also the synergistic catalysts that we can provide to each other.

- First, it is worthwhile to note the collective efforts addressing hypoxia prevention. These include the efforts of Flight Surgeon (FS) CAPT Nick Davenport and Aerospace & Operational Physiologist (AOP) CDR Don Delorey at the Naval Safety Center (NSC) to document and collect hypoxic events, AEP CDR Jim Patrey at ONR to establish a technology development program, FS CAPT Kris Belland and AEP CDR Deb White at the Chief of Naval Air Forces to establish a formal requirement, and AOP CDR Rich Folga and AEP CDR Mike Reddix to establish the technical parameters. This has culminated in a new \$13M research program at ONR to develop a hypoxia monitoring system that has the potential to eliminate hypoxic mishaps in naval aviation.
- Another tool targeting the problem of hypoxia is the Reduced Oxygen Breathing Device, a computerized gas blending tool designed to induce safe and controlled hypoxia-inducing conditions, which is currently used to conduct refresher training for all naval aircrew at the Aviation Survival Training Centers. This device, currently managed by AOP CDR Paul Hauerstein, was designed and championed by AOPs, validated by a cross-disciplinary team at the Naval Aerospace Medical Research Laboratory, implemented using a simulated training environment designed by AEPs at PMA-205, and funded through the efforts of AEPs at ONR. The simulation underlying the training delivery environment is currently being upgraded by AEP LCDR Brent Olde.
- The Human Factors Analysis and Classification System, designed in part by an AEP, CDR Scott Shappelle, is

used by AOPs, FSs, and other officers involved in mishap classification/support through the NSC. Research on this system remains active under several AEPs.

- Another aviation safety tool, the Maintainer Climate Assessment Survey, was developed under the direction of AEP CAPT John Schmidt and is used by AOPs and FSs involved in safety investigations, providing first-of-its-kind taxonomical classification capabilities for trend mapping in mishap data.
- Numerous AEPs have developed and validated cutting-edge tools to provide 21st century aviation personnel selection capabilities, with the support of numerous dedicated FSs embedded in reviewing organizations.

The four naval aeromedical communities share numerous bonds in our common aviation training, flight status, and emphasis on the role of the human in aviation. While the distinctions imbued by our respective specialties often separate our actions, there are noteworthy instances when our communities have collectively worked together on common challenges. This is certainly true on process issues such as we are seeing in the aeromedical communities' collaborative response to the ongoing revisions to Conditional Aviation Career Incentive Pay regulations.

SUMMARY

For nearly three quarters of a century, AEPs in partnership with other aeromedical communities have developed roles and capabilities that make them an indispensable part of naval aviation. This piece sought to outline how the scope of AEP responsibilities has evolved since our community's inception and highlight some of the recent projects and programs that have provided opportunities to work with other aeromedical officer communities to build better capabilities than could have been developed or used in isolation.



AEPs at the 2012 community meeting in Arlington, VA.

Shipmates



History & Legacy: A Brief Chronology of Service and Designation of AEPs

BY LCDR PETER WALKER & WILLIAM LITTLE

*Lord, guard and guide the men who fly
Through the great spaces in the sky.
Be with them always in the air,
In darkening storms or sunlight fair;
Oh, hear us when we lift our prayer,
For those in peril in the air!*

*Aloft in solitudes of space,
Uphold them with Thy saving grace.
Thou Who supports with tender might
The balanced birds in all their flight.
Lord, if the tempered winds be near,
That, having Thee, they know no fear.*

Mary C. D. Hamilton (1915)

The designation as a Naval Aviator and the presentation of “Wings of Gold” dates back as early as 1910, when the first naval aviator, Thomas Ellyson, was asked to report for aviation training at North Island, San Diego. Shortly thereafter, the need for specialists (e.g., Aerospace Experimental Psychologists, AEPs) to provide education and training in the areas of human performance and limitations in this new and dynamic environment became apparent. However, it would take another 50 years for this service to be formally recognized by the designation of wings for AEPs.

The field of Aviation Psychology grew out of the need to refine/define a more objective and less time-consuming means of selecting candidates for military aviation training. Prior to WWI, the number of aircraft used in the military was small and, therefore, there was no impetus to develop new selection systems. During WWI, the number of pilots needed for the war effort increased dramatically, and the initial exploratory research into human abilities and traits that predict success in aviation began. Prior to implementation of these research products, the war ended and military aviation selection programs were phased out.

The beginnings of the AEP community ancestral lineage can be traced back to WWII, when individuals, identified as Hospital Corps-Volunteers (Specialists) [HV (S)], were brought into naval service to assist in a wide range of special projects such as altitude exposure, aviation training, and selection. Perhaps the earliest significant contribution from this community came in the form of the “Pensacola Project” conceived in 1939. In an attempt to meet the tremendous personnel requirements during the pre-WWII military buildup, the Civil Aeronautics Administration

(CAA) in 1939 asked the National Research Council to undertake an elaborate research program on the selection and training of aircraft pilots. In 1940 the Pensacola Project was launched and the field of Aviation Psychology was reborn.

The CAA, in conjunction with the Medical Research Section of the Bureau of Aeronautics, began work in July 1940. The Navy officially adopted the Pensacola Project in April 1941 and began commissioning officers to run the program. The expanding scope of this project and the more general contributions of the HV (S) community lead to the eventual designation of AEP #1, Alan Grinstead, in 1941, and the program later became the Aviation Psychology Section of the Division of Aviation Medicine. The project consisted of a test battery comprised of over 30 psychological tests that were administered to a group of 1000 naval flight students entering training in an effort to identify which tests might be predictive of success in flight training. In 1942, the Navy's first paper-and-pencil selection test, the Aviation Classification Test/Flight Aptitude Rating (ACT/FAR) was implemented.

Over the next 20 years AEPs continued to make significant contributions to Navy research and training. During the early months of 1966, the first group of AEPs were designated as crew members and ordered to duty involving flying. These AEPs were assigned to a myriad of duties including in-flight analysis of human performance, training operations weapons systems and tactics, and the testing and evaluation of new aircraft systems. On 12 April 1967, the Under Secretary of the Navy approved a change to the Navy Uniform Regulations that authorized a new wing insignia for AEPs.



The "Wings of Gold" worn by naval aviators.



The wings worn by AEPs features the Medical Service Corps' oak leaf and twig emblem.

In order to provide a deeper understanding behind the history and legacy of service of the AEP community, it is important to understand the significance behind the "Wings of Gold." On 20 September 1922, Navy Uniform Regulations approved, "a gold embroidered or bronze gold-plated metal pin, winged, fouled anchor surcharged with a shield ½ inch in height, 2 ¾ inches from tip to tip of wings; length of fouled anchor 1 inch." The 13 stripes on the device probably reference the 13 original colonies. Originally designed with an engraved "U.S." centered in the middle of the device, a shield was later used to abide by constitutional laws of heraldry. The shield along with the fouled anchor is, perhaps, symbolic of the mission of protection of our seas.

The gold wings of naval AEPs are similar to those worn by naval aviators with the exception that the shield and fouled anchor are replaced by the symbol of the Medical

Service Corps (MSC) – an oak leaf and twig. Ancient history suggests that leaves from the oak tree may have possessed specific healing powers. The twig may have been adopted to illustrate the supporting nature of the MSC to Navy medicine.

Dating back from the first winged AEP, a total of 149 AEPs have been designated in just over 70 years. The AEP community is now comprised of a multi-disciplinary group from fields ranging from industrial engineering to neuroscience. Today, the combined work of the community is directed toward promoting the safety and operational effectiveness of fleet operators. Professional activity of the AEP community spans all areas of systems development and acquisition including research and development, test and evaluation, program management, human systems integration, human performance, and a variety of technological applications.



Junior AEP Perspective: Important Specialty Leader Attributes

BY LT STEPHEN EGGAN

In June of this year, the Aerospace Experimental Psychology (AEP) community will bid farewell to its Specialty Leader (SL), CAPT Dylan Schmorrow, as he retires from the Navy after 20 years of distinguished service. In preparation for his departure, the community began the process of selecting his successor for SL. The SL selection criteria and process is guided by BUMEDINST 5420.120D, which instructs that:

At least 4 months before expiration of term, specialty leaders must submit successor nominations to Chief, BUMED via appropriate corps chief or director. Nominations should include up to three individuals qualified to succeed as specialty leader. When formulating this list, specialty leaders must seek and consider the advice of the specialty constituency.

In accordance with this guidance, CAPT Schmorrow initiated the process by personally speaking with all of the O3 and O4 AEPs. Specifically, he asked them to describe the qualities and attributes they believed desirable for an AEP SL to demonstrate. Below is a summary of the characteristics captured through conversations with junior AEPs:

1. Outgoing, concerned, and generally good-natured, as well as a productive go-getter
2. An expert with a demonstrated past of helping people
3. Demonstrated understanding of Navy Medicine and Medical Service Corps needs, requirements, and processes
4. An outstanding representative of the scientific community
5. Proactive and knowledgeable about the various billets
6. Understands the Navy's vision of the future and the AEP's role in accomplishing that future, and effectively communicates that vision up and down the chain of command
7. Has breadth of experience across all AEP domains or the demonstrated capacity to work across domains
8. Diplomatic; able to make our case while advocating for the AEP community
9. Strong ties and an ongoing, active engagement with the aviation community
10. Has good people skills and is someone without interpersonal barriers
11. Trusted, approachable, broad background, and well-connected.
12. Someone who will be constructive and engaging with junior officers; timely turn-around, active, quick responding
13. Desires to keep the community strong and makes sure information is passed
14. Strong communicator and someone who has a vision of where the community is headed and how to get there
15. Knows our customers and people with whom we need to interact to move forward
16. Mentorship; truly taking time out to communicate with junior members and listen to their preferences and concerns
17. Enthusiasm, dedication to core AEP elements; the ability to build the AEP core elements and pull together as a group; high energy
18. Fosters *esprit de corps* of our community and team-building skills
19. Well organized; able to help everyone move forward in the same direction
20. Has a vision for the community, understanding for junior people's situations, and someone with genuine concern for junior folks

With these attributes in mind, as well as those gleaned from senior AEPs (outlined in *Responsibilities of the AEP Specialty Leader*, p. 17 of this issue), CAPT Schmorrow strongly encouraged all of the O5s to "self-nominate" and submit a package to be considered for the AEP SL position for two reasons: first, because he strongly believes all AEPs have the duty and obligation to lead our community into the future; and second, because all our O5s possess the desired qualities and qualifications for being the AEP SL – which made the decision for selecting the next SL particularly challenging. As such, the characteristics described above are ones all AEPs should aspire to because one day, it may be your turn to lead.

Shipmates

Responsibilities of the AEP Specialty Leader

BY CAPT DYLAN SCHMORROW

It has been my privilege to serve as the Aerospace Experimental Psychology (AEP) community's 17th Specialty Leader (SL) from February 2009 to April 2013. As I hand over the reins to my worthy successor, CDR Jim Patrey, I thought it an appropriate time to define and prioritize the responsibilities and functions of this office from my perspective. We serve in interesting times. As I continually stress to everyone I meet, AEPs must be able to think forward and adapt in order to stay relevant in the face of an ever-changing strategic environment. While the basic priorities of the SL remain relatively static, the tools and ideas an SL must bring to bear to meet these challenges never stop changing. Here, then, is my take on the responsibilities of the AEP SL, today and into tomorrow.

STRATEGIC POSITIONING & COMMUNITY AWARENESS

While our unique expertise, contacts, and responsibilities help us to consistently maintain a higher profile than our numbers would otherwise merit, a critical responsibility of the AEP SL (and all AEPs, in truth) is to promote awareness among Naval Aviation Enterprise and Navy Medicine stakeholders and leaders about the functions we perform and capabilities we bring to the table. Chief among these is our link to naval aviation, our community's primary reason for existence. AEPs fly, and must continue to do so, in order to fulfill the roles for which we are recruited and trained.

COMMUNITY STRATEGIC FOCUS

It is the responsibility of the AEP SL, in conjunction with Medical Service Corps (MSC) leadership and senior mem-

bers of the AEP community, to ensure that AEPs are working on the right problems, building the right skills, and integrated into the right groups. AEPs must be building skills now to be ready to address the shifting human systems integration (HSI) requirements and emerging technologies that will affect naval aviation and Navy Medicine in the coming years.

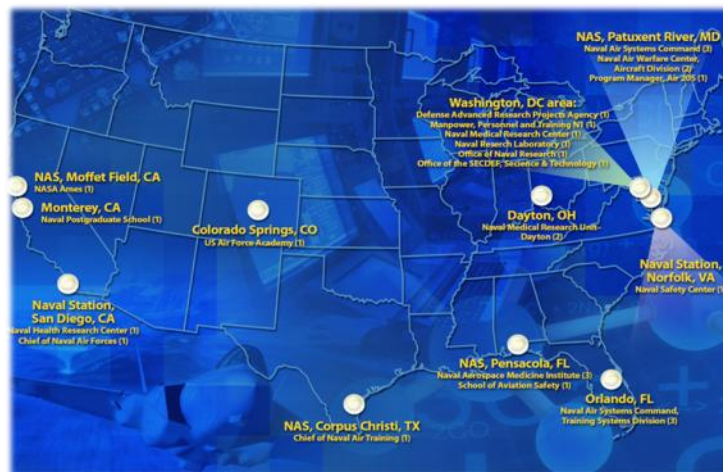
BILLET MANAGEMENT

The AEP SL must also ensure we have the right billets at the right commands. The SL must know the landscape throughout the medical and aviation enterprises to ensure that new billets are grown in the right places, at the right levels, and that existing billets are manned and utilized

appropriately to sustain their relevance and alignment. A big part of this involves working regularly with command leadership to ensure that incumbent AEPs are meeting command needs and having their own needs met.

COMMUNITY MANAGEMENT

It is also up to the AEP SL to ensure his or her officers are getting the developmental opportunities they need. The SL must ensure that senior officers are providing the guidance necessary to their juniors, and that juniors are solving applied problems, building enterprise-relevant capabilities, developing leadership responsibility and experience, and continually honing their skills to address the needs of a changing environment. To this end, the SL must maintain current and accurate information about our officers' skills, interests, family needs, career history, and career paths. Regular community meetings and telephone conferences are a critical requirement.



Billet management is one of the key responsibilities of the AEP specialty leader.



Professional conferences provide opportunity to identify new candidates for the AEP community.

RECRUITMENT & ACCESSION MANAGEMENT

Given the length of the AEP training pipeline – 10 months at a minimum and frequently much longer – it is critical that we continually maintain an active group of recruits. Filling a gapped billet with a new accession routinely takes over a year, and leaving billets gapped is the surest way to lose them. The SL must stay engaged with Navy Recruiting Command and the MSC Community Manager to ensure that MSC leadership is aware of pending AEP accession requirements and that active recruits are processed as aggressively as possible. The SL must ensure that all AEPs are on the lookout for qualified candidates and that conference job placement services are used effectively.

SUMMARY

The above list includes the major recurring themes of the AEP SL responsibilities, but is hardly an exhaustive list. There are also innumerable reporting and tracking requirements inherent to the position and miscellaneous and intermittent data calls that must be addressed regularly. Doing this job the right way takes a considerable amount of time. The single greatest asset an SL can have is a strong ASL, which I was fortunate to have in LCDR Hank Phillips. LCDR Phillips has set the gold standard for what an ASL can be. Simply stated, he was the AEP community's XO and excelled at ensuring everything not only got done, but that it set the bar for every task he performed on its behalf. Thanks to his efforts, the AEP community was continually singled out by Medical Department leadership for our “success stories” and the

AEP community's processes and practices were highlighted at every annual MSC Specialty Leaders meeting as “best practice.” LCDR Phillips and I had the benefit of decades of solid AEP leadership to build upon, and thanks to the previous leaders and mentors we had the tools to succeed. I know LCDR Phillips' relief, LCDR Chris Foster, will work well with CDR Patrey to set the bar even higher.

The decisions an SL makes on behalf of his or her community have impacts that can be felt over decades; some immediately (as in the case of recruiting), and some far later (such as strategic focus). CDR Patrey is our 18th AEP SL, and as we all support him in his new assignment it is also good to reflect upon another fact. Namely, the 19th, 20th and 21st AEP SLs have already been commissioned and winged; they probably are reading this right now. So, please remember we are a team, a tribe, a tight knit community and by working together the AEP community can weather any storm or challenge. Understanding what is important today is the key to maintaining community relevance into tomorrow.

Historical List of AEP Specialty Leaders

| Specialty Leader | Year(s) |
|------------------|-------------|
| Alan Grinsted | 1959 |
| Verne Lyon | 1959 – 1962 |
| Alan Grinsted | 1962 – 1964 |
| Joe Snyder | 1964 – 1965 |
| Bill Madden | 1965 – 1967 |
| Thom Gallagher | 1967 – 1970 |
| Jim Goodson | 1970 – 1974 |
| Thom Gallagher | 1974 – 1977 |
| Dick Gibson | 1977 – 1983 |
| Mike Curran | 1983 – 1987 |
| Tom Jones | 1987 – 1992 |
| Tim Singer | 1992 – 1995 |
| Mike Lilienthal | 1995 – 1998 |
| Dennis McBride | 1998 – 2000 |
| Dave Gleisner | 2000 – 2003 |
| John Schmidt | 2003 – 2009 |
| Dylan Schmorrow | 2009 – 2013 |
| James Patrey | 2013 – |

Shipmates

Passing of the Wings: AEP Specialty Leader Turnover from SL #17 to SL #18

BY LCDR TATANA OLSON

It is an AEP community tradition for the outgoing Specialty Leader (SL) to pass down a large wooden plaque with AEP wings to the incoming SL, a symbolic gesture representing the tremendous honor and responsibility associated with the position. In April 2013, after four years of dedicated service, CAPT Dylan Schmorow turned over the AEP SL responsibilities to CDR Jim Patrey, who is the AEP community's 18th SL. The traditional "passing of the wings" from CAPT Schmorow to CDR Patrey will be performed during CAPT Schmorow's retirement ceremony, which will be held at the Office of Naval Research on June 14th, 2013.

As SL from 2009 to 2013, CAPT Schmorow's leadership was instrumental to the implementation of a number of critical initiatives that will have an enduring impact on the AEP community for many years to come. An ardent believer in the importance of investing in people to ensure the future strength and viability of the community, CAPT Schmorow led the utilization of five conference job placement services for AEP recruiting efforts, the design and production of two different booths to highlight AEP roles and contributions, and the production of a high-quality video showcasing the AEP community. These efforts directly contributed to the commissioning of 11 officers during his tenure and the filling of all AEP billets for the first time in 15 years. CAPT Schmorow also led the establishment of the U.S. Naval Aerospace Experimental Psychology Society (USNAEPS) and the development of the newsletter series, *Call Signs*, devoted to capturing not only the diversity of work being done by AEPs across the Navy today, but the challenges that must be met in the future, such as Unmanned Aerial Systems. His intent for both of these efforts was to provide a means for all AEPs, especially the junior officers, to share their views and demonstrate leadership, and for former and retired AEPs to remain actively engaged in the community. Additionally, CAPT Schmorow institutionalized the "Daisy Chain," "AEP Magnet Board," billet entry and exit history, and quarterly community teleconferences as community management tools, widely regarded as "best practices" across the Navy medical community.



The AEP SL plaque is passed down from the outgoing SL to the incoming SL to symbolize the change in leadership. Located on the plaque are name plates with the names of all the AEP SLs and their dates of service.

CDR Patrey received his Ph.D. in Cognitive Psychology from the University of Illinois in 1997. Since earning his "Wings of Gold" in 1998, CDR Patrey has significantly contributed to the advancement of naval aviation through the development of training systems and technologies to improve aviator proficiency and safety and his leadership in the domain of unmanned aerial systems. His work in support of Navy Medicine is equally impressive through his current position as Defense Safety Oversight Council – Human Systems Integration Task Force Deputy for the Deputy Surgeon General, and prior roles supporting the NATO Human Factors in Medicine Panel and service as the Program Manager for the Office of Naval Research Force Health Protection Pillar (the primary S&T program for Navy Medicine). He is the author of more than 50 technical papers and presentations and has served as a science advisor to programs at the Office of Naval Research, the Defense Advanced Research Projects Agency, and Sandia National Laboratory. Additionally, CDR Patrey has been an extremely active member of the AEP community, coordinating major recruiting efforts at professional conferences, serving as an Individual Augmentee, and accruing over 700 hours of flight time on 14 different platforms on missions spanning four continents, including work aboard the USS Enterprise and USS Stennis. These experiences epitomize the breadth and scope of experiences AEPs strive to achieve, and demonstrate CDR Patrey's personal commitment to the Medical Service Corps (MSC) and the Navy. The selection of CDR Patrey as AEP Specialty Leader by the Surgeon General and MSC Director serve as a testament to his ability to lead this outstanding community in meeting current and emerging challenges.

Shipmates



Reflections: The Career of Dylan Schmorrow

BY LT DAVID COMBS

Captain Dylan Schmorrow's office is on the 17th floor of the Mark Center, the Pentagon Annex, just outside of downtown Washington, D.C. It is a dreary day in the District, and frankly it is always dreary at the Mark Center – a building constructed in what can only be described as a post 9-11 bunker style architecture. It is about as warm and inviting as the recent D.C. winter, which has hung around far longer than usual.

Yet Schmorrow's penthouse office is glorious and has a view of Old Town Alexandria complete with George Washington's Masonic Temple smack in the middle of the scene. It is a suite usually reserved for a Civilian Senior Executive or Military Flag Officer. Schmorrow knows that it is unusual for a Navy Captain to be here.

As he gazes down at the district at the center of American power, he has almost literally climbed the tallest mountain an Aerospace Experimental Psychologist (AEP) can climb. And as he describes, he often felt like he was climbing that mountain without the safety of a rope.

EARLY LIFE

Dylan Schmorrow grew up in Michigan, and he had a very tough upbringing early in life. While in elementary school, he lived in an area with a violent crime rate higher than Detroit. "Often it felt like I just had to survive. Sometimes I wish I could go back and just tell my 4th grade self, and heck, my teenage self, and grad student self, that things would turn out okay."

His neighborhood was not the only tough thing he dealt with. He also found himself on his own traveling between family members. As a 13 year old he traveled for 63 hours nonstop from Michigan through Europe to meet up with family – alone. In an age before smart phones, text messaging, and certainly Google-Maps, he managed to navigate his way through airports and multiple train stations in Great Britain, France, and Switzerland using nothing more than old school hard copy maps. Alone in the train stations of Europe is not exactly a place where people would

expect a 13-year-old boy to be. Surviving the ordeal was one of the first mountains Schmorrow would climb, and it would not be the last.

"To tell the truth, statistically I should be a hooligan in downtown Detroit right now instead of reflecting back on an exciting naval career. There were times in my life that have been like mountain climbing without a rope. It sometimes would appear that I was one moment, one wrong move away from falling. And at those moments, there were always a few people who would say, 'Dylan, you can't do that.' 'You shouldn't do it that way if you want to succeed.' 'You need to wait until you are told how to do that.' Luckily for me there were also people along the way who served as beacons of light. I've always had this drive to do everything in my power...everything...to prove to those who doubted what was possible that they were wrong." It is not surprising that two of his favorite quotes are from Chuck Yeager and Mohammad Ali. Chuck Yeager's advice was, "You don't concentrate on risks. You concentrate on results. No risk is too great to prevent the necessary job from getting done." Mohammad Ali once said, "Impossible is just a big word thrown around by small men who find it easier to live in the world they've been given than to explore the power they have to change it. Impossible is not a fact. It's an opinion. Impossible is not a declaration. It's a dare. Impossible is potential. Impossible is temporary. Impossible is nothing." Dylan Schmorrow's career certainly embodies the sentiments articulated by these iconic men.

GRADUATE SCHOOL

In graduate school, Schmorrow's doctoral advisor challenged the young scientist. "I remember when I applied, my advisor wouldn't let me into the Ph.D. program because he felt that graduate students often avoided their thesis and dissertation research and would leave graduate school with neither a Master's nor a Doctorate degree after years of study. He had simply gotten tired of students quitting on him, so he told me he wouldn't let me into the



Grad school “Dylan” (Left, THEN) & CAPT Schmorow (Right, NOW).

Ph.D. program until I finished my Master’s. It was embarrassing, but he was a clever behavioral scientist who knew exactly how to maximize his students’ efforts. It was embarrassing being the only guy in the program who wasn’t on the Ph.D. track. All the other professors accepted their students directly into the Ph.D. program. So you know what I did? The summer after I finished my BA – before I even started my Master’s coursework – I collected all of my thesis data. I was completely done with my core thesis research before I even started my Master’s classes. This allowed me to achieve my main goal of getting myself formally into the Ph.D. program, but it also had the benefit of me finishing my first Master’s in less than a year.”

Once he was in the Ph.D. program, the drive in Schmorow to survive did not let up even for a moment. “I used to sleep in my office (against policy). I would get edits of a paper from my advisor – this was before e-mail so it would be hard copy. I would get the edits, stay in my office, and not sleep until I had completed the edits. Then I would literally go sleep in the doorway of my advisor’s office so he couldn’t get past me until he had my corrections in hand.” Focusing only on the Ph.D. was not enough for Schmorow; he also got himself accepted into the Master’s Degree program in the University’s Philosophy Department as well. He was concerned someone might think his Ph.D. in Psychology was not broad enough. Ultimately, he ended up only spending four years in graduate school at Western Michigan University and walked away with two Master’s and a Ph.D. – all while working a full-time job at a treatment center for adolescents with chronic behavioral issues.

As for many new graduates, the economy was a problem not easily overcome. According to Schmorow, when he was about to hit the job market there was a dearth of openings for new assistant professor positions. To drive

the point home, he noted that he was especially excited about one job opening to teach psychology at a community college in South Dakota. “I obviously needed a job and I was always concerned with having debt. I finished with a little college debt after eight years of school and I needed to hit the ground running.” At this time in his life, the military was not exactly at the top of his list of possible job prospects. “You’ve got to remember, at this point I was a long haired kid with a tie-dyed shirt living on what could be described as a commune – I had no concept that the military had an Aerospace Experimental Psychology career field. I was seriously excited about the possible South Dakota job at a community college.”

It was not until the winter break six months before he planned to complete his Ph.D. that the military was even introduced as a possibility. “My Grandma, who was an Army nurse in Alaska during World War II, asked me to look into the military. At that time, I thought military occupations were direct warfighting or medical treatment. I couldn’t imagine that the military actually employed uniformed officers to conduct science. But she asked me to ‘look into this as a present for me’ – that was all I needed. I was surprised to learn of the opportunities and will never forget that without her advice, her request, that I would have missed out on the adventure of a lifetime.”

As was perhaps the experience of a number of Navy AEPs, the Army and the Air Force did not exactly inspire Schmorow. “The Army and the Air Force really didn’t even talk with me. They sent what amounted to a phone book worth of paperwork and didn’t appear to have the same depth of opportunity. The Navy on the other hand, sent a Commander to my office who described the possibility of naval flight school and great duty assignments.”

A few months later, as is the dream of every grad student, Schmorow found himself in a tropical paradise for his final spring vacation before graduation. Though in his case, rather than partying he was in Pensacola, Florida for AEP interviews and a flight physical. “I didn’t have any money back then, but I scraped up about \$300 and bought every Navy book I could find. I wanted to understand the Navy and know the history. I didn’t have any suits so my Dad bought me a new suit along with a sport coat and matching pants to get me through the visit. I cut my hair and tried my best to be presentable for my interviews.”

Schmorow’s interviews and physical went well. Unfortunately, his interactions with one student, who was then going through Aviation Preflight Indoctrination (API), put a damper on the visit. “It was weird. I was being recruited,



That's right, it's a Vespa.

pretty excited about the opportunity, and frankly thrilled to be there. But there was this one student who seemed to be discouraging me from joining. His message was that API might be too hard, and as a fellow scientist, that this might be the wrong thing for me. His actual comment as he walked away from our brief conversation on the sidewalk was that I 'should think twice about it.' I don't know, maybe everyone feels that way going through API, but – not unlike being told by my advisor that he wouldn't let me in the Ph.D. program – I took it as a challenge.”

The real trouble for Schmorrow getting into the Navy as an officer was that the AEP community was only taking one more accession for the following two years. “After an amazing visit to Pensacola, Florida, the cradle of naval aviation, a place where students study while the Blue Angels practice outside their windows, I had it in my head that this was what I wanted to do – that was it. That community college job no longer looked that attractive.”

THE NAVY

He found a way to overcome the difficult odds and the discouragement of the API student, and eventually found his way to Officer Indoctrination School (OIS; the equivalent of current day Officer Development School) in Newport, RI. As with his time in graduate school, now LT Schmorrow found a way to will himself to the front of the pack. He was appointed as the Company Division Officer (the senior officer responsible for nearly two dozen fellow officers) and upon graduating this initial school, the OIS leadership conferred all three OIS awards (academic, physical fitness, and military honors) on Schmorrow.

When asked if at this early point in his career he thought he would be a career AEP, CAPT Schmorrow noted that LT Schmorrow was not quite sure where the road would

take him. Because he excelled during API, he entertained ideas of transferring and trying to make it as a pilot. “When I first joined and was doing so well with API, I thought, ‘I could go fly jets!’” However, his first experience in a T-34, then the Navy’s introductory flight trainer, quickly changed his mind. “I discovered the actual operational world of naval aviation outside of the text books was a wild ride. I was sick as a dog that first day!” CAPT Schmorrow noted with a laugh. “That was the end of my full-time pilot idea. Being a full-time AEP with one foot in the cockpit and one foot in the laboratory seemed an ideal place to be.”

LT Schmorrow still distinguished himself as a student finishing API with a 93.14% cumulative grade point average and he walked away with the highly sought after Medical Service Corps (MSC) award recognizing him as the MSC officer graduating at the top of his class.

In addition to his student accomplishments, he also conducted one of the first cockpit assessments of the T-39 Intermediate Flight Trainer and managed to get himself into a little trouble for the effort. “I went and did this cockpit analysis and the training wing invited me to give a presentation about it at their annual conference.” As might be expected, LT Schmorrow accepted the invitation, which did not sit well with some of the higher ups in his office at the time. “I think they thought I was too junior as a student and would embarrass myself. So they insisted that they go along with me. Then I got into even more trouble for my presentation style. I tend to be passionate and they wanted me to basically sit up there and read a paper. I got lectured back at the school house for not doing it the standard way, but a funny thing happened – the wing loved it and the senior Admiral in charge of the conference sent me a Flag Letter of Commendation for the presentation. I tell you, this was probably the first of many times in my Navy career when I’m glad I didn’t do something ‘right.’”

CAPT Schmorrow, now seeming a bit contemplative, slowly sips on his coffee in the Mark Center cafeteria. “I tell you, my first billet at NAVAIR (Patuxent River) was the most exciting thing you could have ever imagined. There I was, first tour, and I open a big storage unit near my office one day and find a bunch of equipment from the old Mercury astronauts. The history, as well as the current research, was blazing the trail to better understand the effects of the aerospace environment on humans.”

It was early moments like this that convinced LT Schmorrow that being an AEP was probably the career for him. His early superiors at NAVAIR had similar thoughts about

his career trajectory. His first CO, CAPT Bill McCracken, called him a “superior performer with unparalleled productivity and adaptability.” Schmorrow’s queasy stomach even seemed to take on these characteristics as he constantly volunteered as a hazardous duty research subject in the Navy Human Centrifuge, which commonly spun him up to 10Gs. “I was always volunteering for that thing. I loved conducting and participating in research. We were always trying to solve some serious problem such as ‘can you reach the ejection handle in a jet if it’s positioned here (motions to an imaginary handle) when you enter an out-of-control flight situation’ or ‘what are the cognitive effects of flying at 10G?’”

As exciting as his first tour was, his second tour was oppositely distressing. When asked “what was the biggest disappointment in your career?” he initially seemed surprised by the question and then referenced his second tour at the Naval Post Graduate School (NPS). “Interesting question. That’s tough. Originally, my time at NPS seemed like a huge disappointment, but, over time and after reflection I realize that period actually helped define who I am.”

LT Schmorrow was supposed to head out to NPS for a prestigious John G. Jenkins Postdoctoral Fellowship. However, his military orders placed him into an Operations Research (OR) Master’s Degree student billet; his detailer told him, “they will sort it out when you get



Hazardous duty subject in the Human Centrifuge.

there.” This was problematic for many reasons. A Ph.D. going off to get a new Master’s was certainly one problem, but losing out on the high profile post doc was another. “It was bad. I already had a Ph.D. so it could be construed that I needed additional schooling to master my subject. Additionally, the OR Program was by far the most difficult curriculum that I had ever gone through. That first year, half my class didn’t make the cut and got booted out of the OR Program. I never left the base – all I did was study!”

While his appointment at NPS was not what he had expected, LT Schmorrow found a way to scale the mountain face – though it was getting steeper.

“It was obvious that the orders weren’t going to be ‘sorted out’ as the detailer had stated, so I had to accept that I was going to complete the Master’s program. In order to make the best of the situation, I immediately accepted an appointment as a full-time assistant professor teaching courses on Human Factors, Statistics, and Computer Science at NPS while completing the OR Master’s program. I also oversaw several graduate student theses. I was fortunate to work with a mentor who had developed the post-doc for me and it became a post-doc on steroids. I taught full time, I was a full time graduate student, and – thanks to a second mentor – I conducted my own independent research work at both NPS and the Naval Safety School for two years.”

Some might presume that such a broad area of effort would have endeared him to the NPS higher ups, it was a bit more complicated than that. Although LT Schmorrow was generally very well supported, not ALL NPS staff were on board with Schmorrow’s plan. One department chair, the one his billet reported to, took issue with LT Schmorrow being appointed by the NPS Provost as both a student AND a professor. This department chair refused to let him pursue the two Master’s degrees he had been working toward. “You had to have a 3.5 GPA to be allowed to count a single Master’s thesis for two Master’s degrees and I had a 3.499999. I was crushed that I wouldn’t be able to get both Master’s degrees with my single thesis. But one day a retired Navy Captain in the Provost’s office called me aside and said ‘Hey Dylan, read the student manual on this a little closer,’ which I did. It turned out that if you wrote two theses they couldn’t stop you from getting both degrees. So I thought, ‘got it, I’ll write two theses.’ Again, this was one of those moments that was originally immensely disappointing – so I tie that to my experience at NPS. But as I look back on it all now, I realize how the challenge pushed me to achieve something

I may otherwise not have achieved. And it's funny, this department chair telling me that I wasn't 'doing it right' probably motivated me more than anything. Who knows, if he had just told me 'ok, you can pursue the two Master's degrees simultaneously with the 3.499999 GPA maybe I wouldn't have even taken the few extra classes required to obtain the second degree. But him telling me 'no, you can't do that, you're not approaching this the way I want' probably drove me more than anything. I wanted to succeed in spite of everything."

Ultimately, Schmorow left NPS with two new Master's degrees, a Post Doc, teaching experience, and graduate advising experience. What mountain?

His next stop, or perhaps more appropriately next mountain, was Washington, D.C.

WASHINGTON, D.C.

His time in the District of Columbia began at the U.S. Naval Research Laboratory (NRL). LT Schmorow was plainly in his element. NRL then, as it does now, offered an AEP not only the opportunity to conduct top-notch research, it also had an open door to program management.

"My wife is always joking that I barge through open doors. I certainly did when I arrived in Washington."

In D.C., this was plainly the case. As an NRL researcher, LT Schmorow found a way to publish papers, win awards, and generally integrate himself into Washington. He not only conducted research, but he also managed programs at both the Office of Naval Research (ONR) and the Defense Advanced Research Projects Agency (DARPA).

"I had offices all over town" he fondly remembered. "I made a point of making sure that everyone thought they were getting 90% of my time. It was crazy. I occasionally slept in my NRL office, would run to DARPA first thing in the morning, head down the street to ONR, and end up back at NRL for the afternoon. I'd grab dinner, PT, and then work until midnight." His NRL Commanding Officer, CAPT Buckley, pointed out that LT Schmorow had "unbounded initiative" which seems a notable understatement.

During his time managing three high stress, high profile, D.C. jobs, newly promoted LCDR Schmorow was invited to join DARPA for his next assignment – an honor of high order, especially for someone so junior in rank and

experience. There was just one problem; there was no billet for him at the agency. "They told me to call my detailer and have him put me in a billet to move there. So the next day I called the detailer as directed, he looked and said there was nothing."

Regardless, LCDR Schmorow kept on planning for his move across the Potomac River to DARPA and soon found himself down at Naval Air Station Patuxent River speaking with his Specialty Leader (SL) about his next assignment at DARPA. "It was a weird conversation. I was excited about DARPA and the SL just sort of nodded along with me. When I left his office, his assistant walked up to me to introduce himself and told me he was looking forward to me joining them at Pax River in six months!"

Apparently, neither the detailer nor the AEP community was expecting LCDR Schmorow to end up at DARPA. "I remember thinking, 'damn, nobody believes I can get that billet to DARPA!'"

Schmorow returned to DARPA the next day where, once again, he was told that everything would work out and not to worry. However, "Some senior AEPs and my peers were really telling me I was crazy to think I could get to DARPA. Not only was there no billet there, but because the job is not an official AEP position, it wouldn't help for promotion." Within days, much to everyone's (well, almost everyone's) surprise, a DARPA billet appeared. It was written for someone with an aviation background, five graduate degrees, a post doc, and prior ONR, NRL, and DARPA experience.

LCDR Schmorow was going to DARPA.

DARPA

"DARPA was fun. Everything was a very big gamble and I felt like I was playing roulette most of the time. Bet everything on 33 black! And luckily the ball would land on 33 black. There was so much pressure to get programs approved – many of my peer Program Managers (who were O-6s and GS-15s) weren't getting their ideas funded. But I always believed in what I was doing and focused on the results I wanted. I had a great team. The best team. Failure was not an option. We simply had to achieve our goals."

At DARPA, LCDR Schmorow, in a job often reserved for a senior officer (or a GS-15 Civilian Equivalent), was called "My very best" by the Director of the Agency, Dr. Tony Tether. As a Program Manager (PM), he led programs that, combined, amounted to over \$200M. Not only that, but in this role LCDR Schmorow also managed to



CAPT Schmorrow and wife Laura, daughters Grace and Lily, and son Max.

find the time to publish dozens of papers in refereed journals, mentor junior AEPs as the assistant SL, and picked up the Defense Superior Service Medal during his twelfth year as an AEP (which is a medal, it should be noted, almost always reserved for Flag Officers or retiring 06s).

One of his programs, Augmented Cognition (AugCog), is one of his proudest achievements. Naturally, any PM should be proud of his or her programs, but Schmorrow's AugCog happens to have the distinction of being featured in the Genius Edition of Esquire Magazine. In the December 2003 issue, which featured Will Ferrell on the cover, LCDR Schmorrow is seen smiling in his dress uniform in front of the entire DARPA staff. Esquire called LCDR Schmorrow the biggest "cockeyed optimist" in the agency. They suggested that his AugCog program could usher in the next phase "in the evolution of the American Soldier." The article noted that his work at DARPA, from their perspective, "is the future."

Schmorrow's personal life was also rapidly changing during his DARPA stay. Recently married to Laura Worcester, they welcomed all three of their children (Grace, Max, and Lily) into their lives while Schmorrow maintained his DARPA pace. "They are my rock. When all hell is breaking loose at work, when the pressure is on every minute of the day to perform, I know I can go home and remember that this [family] is really what it's all about. It's my greatest achievement."

Now a senior LCDR, Schmorrow found himself pitching Phase 3 of AugCog to DARPA leadership, who would determine if his program lived on or died. Schmorrow was asked to rank order a number of his research teams, ostensibly so the DARPA leadership would give some the ax. "I was supposed to come in and review my program and rank order my teams for the Director of DARPA (a 4-Star equivalent political appointee). But it was impossible to rank them. They were all doing unique and critical things for AugCog, and if I'd lost any of them it would have been

devastating for the program. I basically told him that if he was insistent on a rank order, he was welcome to take the list of performers and rank them randomly – that held the same logic as if I were to try to rank them. Dr. Tether stood up, shut his book and walked out of the brief. You could've heard a pin drop. The spectators in the room told me I was dead, the program was over and that I had pushed too hard. And to be honest, I thought they might be right. Even though I believed that I did the right thing, I was devastated. My team, all of those researchers, they were depending on me. Their livelihoods, their mortgages, their kids. It all hit me at once."

"The next day the comptroller called me – I didn't lose a dime of funding. I got to keep all of my teams. My entire portfolio was fully funded. This was a first for the Agency under this gated approval method. To this day, I credit the advances we made with this program to the Director of the Agency. He drove me hard and had the highest of expectations. If he hadn't been so demanding we would never have made the progress and advances that program achieved. Simply stated, it put operational neuroscience into reality for the operational military. The medical and human-systems-integration impacts we see today are thanks to his demanding process and leadership."

ONR

After bringing his work at DARPA to a close, LCDR Schmorrow was on the move. Now an up and coming hot shot with a track record of success, he pinned on O5. As he was preparing to leave DARPA, he had attracted the attention of the Chief of Naval Research (CNR) Admiral Jay Cohen. "As I was wrapping up at DARPA, the CNR, Admiral Cohen, hand selected me out of the Agency to come over to ONR to be his Executive Assistant (EA). I had no idea what I was in for. I learned the business side of military science and technology and was introduced to the art of supporting the national research agenda in conjunction with the White House and Congress."

Whatever mountains CDR Schmorrow had encountered, once again he was faced with unusual challenge during his tenure as the EA at ONR. Less than six months into his arrival at ONR, Admiral Cohen retired and was selected by the President of the United States to be the Undersecretary for Science and Technology (S&T) for the newly formed Department of Homeland Security (DHS).

The Admiral was quickly confirmed by the U.S. Senate, and, in moving on to DHS, he took with him two-dozen key ONR leadership personnel to help transform the DHS S&T research enterprise. "This was great for DHS, it really

helped breathe life into the new S&T shop. But on our end, you can't lose that many people in one swoop and not have an impact."

There was an impact. A leadership void at the Navy's primary S&T research funding agency. "There were days I was sitting in my office just trying to keep track of who was leaving ONR on a white board, then I'd get a call saying so and so was leaving to take some great job across the river. This was also a great opportunity for the ONR team that stayed behind; new opportunities were everywhere for folks to step up."



LCDR Schmorrow pinning on O-5 with CAPT Dennis McBride (AEP #72) and Dr. Tony Tether.

Ultimately, CDR Schmorrow's experience ended up as what amounted to an XO tour working with the new CNR, Rear Admiral Landay. He helped manage the whole of ONR, which then, as it does now, consists of over 3000 people and a \$2 Billion budget. In addition to his efforts as the EA for the CNR, CDR Schmorrow also managed his own ONR programs consisting of 60 individual projects with a \$30 million dollar budget. His new boss, Rear Admiral Landay referred to his work as "flawless" and even stated that CDR Schmorrow would have been well suited to be a Flag Officer. As if to drive home the point, upon his exit from ONR at only his 15th year mark, CDR Schmorrow was awarded both the Legion of Merit and the Navy Top Scientists and Engineers award (becoming the first military officer to ever achieve the honor).

OFFICE OF THE SECRETARY OF DEFENSE

The Mark Center Cafeteria is starting to fill up now. The lunch rush is now upon CAPT Schmorrow.

He understands his last Navy days are upon him.

"You know, I've been at OSD (Office of the Secretary of Defense) for almost five years now. It's been fun. I'm really going to miss this."

In many ways, OSD has been the top of the mountain for him.

Though, amusingly, even as he was getting started at OSD he had a bureaucratic mountain to climb that seemingly only he could summit. A little over a year after he had arrived, the Director of Human Performance, Training, and Biosystems Research Directorate vacated the position



CDR Schmorrow receives recognition plaque for 10 year of service at ONR from BGEN Tom Murray (Vice Chief of Naval Research).

leaving CDR Schmorrow in the role of Acting Director. CDR Schmorrow had been selected for CAPT, yet was not authorized to wear the rank for four more months. This assignment made sense to the OSD leadership; however, it also occurred to the office that the position of Director is usually held by a Flag level civilian in the Senior Executive Service (SES, a civilian of Flag equivalence).

"So here I am an O5, though I had selected for Captain recently, preparing to sit in this chair. People quickly realized that they shouldn't send an O5 to the kinds of meetings that the Director was supposed to be attending. So someone gets the bright idea to Frock me. I decided to look into it more, so I asked around. Many folks in the Navy said it couldn't be done. End of story. Well, it turns out OSD leadership put in a formal request to the Navy and in a handful of days I got Frocked and put on CAPT the day I took over as the Director. I've never, ever, seen anything happen that fast! Yet another example that nothing is impossible."

Things moved quickly for the newly Frocked CAPT Schmorrow. Within the space of a year he was not only



CAPT Schmorrow, left, leading DoD's vision of future Human Systems Research.

functioning as the Acting Director of a major OSD research directorate, he was also personally overseeing the Human Social Culture Behavior Modeling program (a \$122M research program), picking up the role as AEP Specialty Leader, Co-Chairing the White House Inter-Agency subcommittee on National Science and Technology, and serving as the Defense Science Study Board Executive Secretary for Autonomous Systems.

BEYOND

These days, CAPT Schmorrow is having some time to reflect on a number of topics. Having 20 years of experience and an impending retirement will do that to a person.

These days he thinks a lot about the AEP community – and his future.

“You know, I really have strong feelings about the future of the AEP community,” he says as he realizes his supply of French Roast coffee has been expended. “There are those who believe that in order for us to continue to be relevant over the next 20 years, we need to become more generalists and sort of leave the ‘aerospace’ part of our identity behind. I couldn’t disagree more. I think that we’re in a place where we need to mirror the first days of the community.”

He means the time around WWII when the Navy needed brave scientists to rise up and conduct the initial work in understanding how humans and aircraft, a relatively new technology at the time, interact. In this case however, he speculates that the AEP community will need to rise up and simultaneously seize hold of research surrounding the relatively new field of autonomous systems.

“If you think about WWII aviation, that’s where we are with autonomy. We – the AEPs – need to do the same thing for autonomy that we did for manned aviation. We are uniquely qualified to be useful on selection, safety, design, S&T, and operational support. Everything. Who knows, maybe someday the ‘A’ in AEP will also stand for ‘Autonomous.’ I mean our name has already changed once. It used to be ‘Aviation Experimental Psychology.’ So who knows? What I do know is that this community has a bright future, but the future won’t just volunteer for us – we have to seize it. And we need to be thinking Mars, the Moon, and space too. All I can say is that it’s not going to look like C-130s and attack helicopters.”

As he speaks about the grand future of the AEP community, he trails off a bit. As if the realization that 20 years in uniform really is coming to an end, and soon. As he reflects on all that he has accomplished, he looks back with a sense of calm that he didn’t have when he started on this journey. “Having been where I’ve been, having had the privilege to do what I’ve done, I’m just grateful at this point. The Navy, the AEP community, my colleagues, friends, my peers, and my family – I’m just grateful that I got to ride this ride.”

So what’s next? “Really, I just hope that I can get a job in industry where I continue to champion science, technology, and other advancements focused on real-world problems for both national security and commercial application. But then I would also love to have a dual appointment in academia or a non-profit where I can also more broadly work to shape the national research agenda.” “Or,” he adds sheepishly, “both.”

It sounds like he wants more mountains to climb.

Shipmates



Hail our New AEPs

LT DAVID ROZOVSKI

LT Rozovski, was winged as AEP #147 on 28 February 2013, after earning his Ph.D. in Industrial Engineering, Aviation Human Factors from Purdue University. As he worked through the student AEP curriculum, PoPo also completed the Aviation Safety Officer and the Crew Resource Management Instructor courses. His first duty station is NAWCTSD, where he is working on hypoxia alerting and simulation technology development and research. LT Rozovski holds dual fixed and rotary wing pilot ratings in the U.S. and Chile and has accumulated 500+ hours in 25+ different aircraft. His work on tiltrotor power control interfaces and air traffic control and command systems has garnered him attention from NASA, Boeing, and the Canadian National Research Council and has earned him three separate domestic and international patents.



LT David "PoPo" Rozovski.

LT JOSEPH GEESEMAN

LT Geeseman commissioned on 27 September 2012 at the Gateway Arch in St. Louis, Missouri. He earned his doctorate in Brain and Cognitive Sciences from Southern Illinois University – Carbondale. During graduate school, LT Geeseman received the Arthur Menendez Vision Science Award, which helped fund research for his dissertation. His research interests are primarily in human sensation and perception, cognitive psychology, and advanced statistics/modeling.



LT Joseph Geeseman.

LTJG ERIC VORM

LTJG Vorm was commissioned on 14 June 2012 in Chicago, IL. He joins the AEP community after serving 8 years as a Fleet Marine Force Hospital Corpsman, distinguishing himself among his peers by being selected to attend several special operations schools, and deploying as a member of an elite 13-man team to Iraq in support of Operational Iraqi Freedom. LTJG Vorm earned his M.A. in Educational Psychology through the University of North Texas. In the summer of 2012, he was invited as a visiting researcher to Yale University where he worked with Dr. Charles A. Morgan on dissociation and cognition in extreme environments; he hopes to continue his work with special military populations in the future.



LTJG Eric Vorm.

Shipmates

Fair Winds and Following Seas, LT Findlay

BY LT STEPHEN EGGAN

Although the origin of the saying “Fair Winds and Following Seas” is unknown, it most likely evolved by combining two frequently used nautical phrases. “Fair Winds” is a condition that offers a speedy (in the time of sails), yet safe journey. “Following Seas” describes a sea in which the waves and current travel in the general direction of a ship’s heading, which ensures a comfortable journey for those onboard. Together the terms offer the ideal underway conditions for speedy, safe, and comfortable travel to a destination. Today, the traditional wishes of “Fair Winds and Following Seas” are often offered at naval ceremonies as a nautical blessing of good luck and fortune, or farewell, as someone (or something in the case of a commissioning ship) sets sail on a new voyage.

Last October, the Aerospace Experimental Psychology (AEP) community learned that it will have to bid farewell to one of its finest LTs, Rolanda Findlay, who will be leaving active duty service in July 2013 at the conclusion of her tour. Many AEPs have not yet had the chance to see LT Findlay or hear of her adventures during her Individual Augmentee deployment to Afghanistan (she returned in January) where she served on the Navy Mobile Care Team. So it saddens us that she will be departing so soon, especially since she has proven to be an outstanding Naval Officer – truly a valuable asset to the AEP community and the Navy – but also because she is a wonderful person and friend. In a message to the AEP community, CAPT Schmorrow expressed the following regarding LT Findlay:

I'd like to say a few words about the difference LT Findlay made to our community in just one tour. She made a big difference in a lot of places. She more than bit the ground running at her first duty station, won the Golden Pen Award from NOAA, was profiled in several publications, played a starring role in our community video, and performed countless hours of volunteer work. She won a mid-tour award very early into her tenure for breaking records as Combined Federal Campaign chair, and managed to acquire and excel at just about every collateral duty under the sun, all while helping define selection requirements for the next ASTB, and aggressively recruiting other AEPs.



LT Findlay returns from Afghanistan, with CAPT Ciccone and CAPT Norton.

One tour is far too short a time to work with a peer like LT Findlay. I have no doubt that she will be an immediate success wherever she goes. She has that critical combination of expertise, confidence, drive, and organization that translate to success in any setting, any endeavor. I certainly hope we get to continue to work with her throughout her career.

For those who are curious about what LT Findlay will be doing after leaving active duty service, she will be serving on the *World Race*, an 11-month, 11-country mission trip (www.theworldrace.org). Some call it the adventure of a lifetime. She has called it a chance to pursue her passion full-time. LT Findlay shared, “The *World Race* is an opportunity to share the love of Jesus with relatively forgotten segments of our world in a practical and meaningful way.” To do this, she will travel to some of the most challenged areas of Thailand, Cambodia, Vietnam, South Africa, Mozambique, Swaziland, Nepal, India, Turkey, Bulgaria, and Romania. She and her teammates will do their best to tackle the unique needs of the communities in which they will be embedded. LT Findlay’s journey can be followed on her blog AlexisFindlay.theworldrace.org

It is with a heavy hearts that we have to bid farewell to LT Findlay; however, we are delighted that she has found a calling and are excited about her new adventure. So we wish LT Findlay “Fair Winds and Following Seas” as she embarks on her new voyage in life.

Shipmates



LT ROZOVSKI WINGED AEP #147

On 28 Feb 2013 LT David “PoPo” Rozovski was winged in a private ceremony at the NAMI schoolhouse in Pensacola, FL. The ceremony was performed by CAPT Mark Edwards, NAMI Schoolhouse director, with a number of AEPs in attendance. He has reported for duty at NAWCTSD in Orlando, FL.



LT Rozovski completes the AEP curriculum, with CAPT Mark Edwards.

LT ROZOVSKI AWARDED PATENT

The patent (U.S. patent number 8,401,778 B2) is for a system that allows air traffic ground controllers to directly and immediately communicate intended taxi paths to aircraft by drawing the route on an airport map display. As technology progresses, other systems will permit the pilot to view the instructions in digital format inside the flight deck. The direct digital transfer of instructions from the ground controller to the aircraft will eliminate the potential read back errors found in verbal communication and decrease the amount of information being transmitted over the communications radio. The system will also provide a cognitive offload tool to the controller as they

would be able to view all taxi paths drawn in real time as opposed to having to memorize them.

LT ROZOVSKI RECEIVES DISSERTATION AWARD

The Stanley N. Roscoe award is presented for the best Doctoral Dissertation written in a research area related to Aerospace Human Factors. This award includes an honorarium of \$500. Criteria include (a) significance of the problem and innovativeness of the approach; (b) review of related research; (c) effectiveness of the research design and analysis; (d) interpretation of results; (e) theoretical and practical value of the work; and (f) clarity of writing. The award will be presented at a luncheon banquet at this year’s ASMA conference in Chicago, IL.

AEPS NOMINATED FOR 2013 ADMIRAL JEREMY M. BOORDA AWARD

Several AEPs were nominated for 2013 Admiral Jeremy M. Boorda Award for Outstanding Integration of Analysis and Policy-Making for their work as part of the Live-Virtual-Constructive Training Fidelity Team. Those AEPs include:

- CDR Joseph Cohn
- CDR Jim Patrey
- LCDR Brent Olde
- LCDR Jeff Grubb
- LCDR Hank Phillips
- LT David Rozovski
- LT Lee Sciarini

LCDR WALKER’S WORK ACCEPTED TO KNOWLEDGE DISCOVERY AND DATA MINING (KDD) 2013 CONFERENCE

On 13 May 2013, LCDR Walker’s submission entitled “Network Discovery Via Constrained Tensor Analysis of FMRI Data” was accepted by the KDD 2013 conference for an oral presentation, and for inclusion in the proceedings as a full paper. KDD is the premier venue for Data Mining and Knowledge Discovery and a very competitive forum; this year, only 17.4% of submissions to KDD were accepted.



LT Combs leads a technical exchange event at DARPA.

LT COMBS LED A TECHNICAL EXCHANGE EVENT AT DARPA

On 07 May 2013, the event on “Trust Research in the Department of Defense/Intelligence Community Context” brought together four panels to present research and discuss challenges on Trust in Social Networks (DARPA Panel), Physiological Measures of Trust (IARPA Panel), Trust between Individuals (NRL Panel), and Trust in Human/Machine Interactions (AFOSR Panel). Eighty people from across DoD (all services) and the IC (e.g., CIA, DIA, State) attended the event, led by LT David Combs.

LT SCIARINI RECEIVED END OF TOUR AWARD

LT Lee Sciarini received the award for “Meritorious service while serving as Science and Technology Manager at Naval Air Warfare Center Training Systems Division Orlando, Florida from May 2010 to June 2013.” During his tour, LT Sciarini coordinated and executed a wide range of tasks critical to the success of a diverse and complex portfolio of over \$35M. He was instrumental in revising the operator front end analysis and avionics technician training for the MQ8B and was invaluable to the success of the Office of Naval Research’s Decision Making and Expertise Development technology investment area and Unmanned Aerial Systems Interface, Selection and Training Technologies enabling capability. LT Sciarini was instrumental in receiving \$396K of neuro-physiological



LT Sciarini receives the Meritorious Service Medal at NAWCTSD.

research equipment that will enhance NAWCTSD’s future ability to conduct human performance RDT&E. He also contributed over 200 hours of community service as a mentor, speaker and professional society leader.

LCDR GRUBB RECEIVED END OF TOUR AWARD

LCDR Jeff Grubb received the award for “Meritorious service while serving as Military Deputy Director for Research and Technology at Naval Air Warfare Center Training Systems Division Orlando, Florida from July 2010 to June 2013.” During his tour, LCDR Grubb oversaw the execution of a \$15M annual research portfolio, yielding over 130 scholarly papers and reports and one patent. His leadership resulted in a 30 percent increase in the command’s Naval Innovative Science and Engineering program. His thorough analysis of the vestibular consequences of centrifuge motion on behalf of the Naval Aviation Enterprise senior leadership enabled the Navy to avoid a \$26M in procurement costs for a potentially harmful training device.



LCRD Grubb receives the Meritorious Service Medal at NAWCTSD.

Calendar: Mark These Dates Down!

June 12-13, 2013

Aerospace Experimental Psychology Unmanned Aerial Systems Technology Development Strategy meeting, Washington, D.C.

June 14, 2013

Retirement ceremony for CAPT Dylan Schmorrow. The ceremony will be held at the Office of Naval Research at 1030

July 21-26, 2013

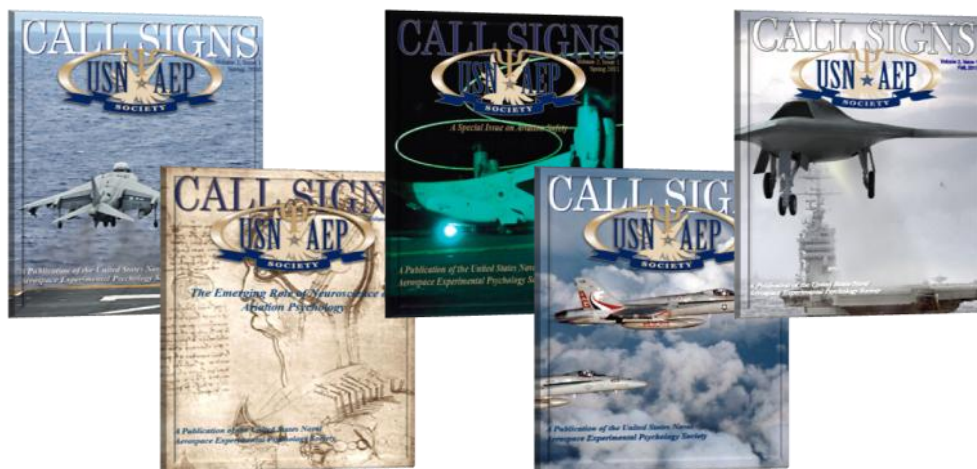
15th International Conference on Human-Computer Interaction and 7th International Conference on Augmented Cognition, Las Vegas, NV

September 30 - October 4, 2013

Human Factors and Ergonomics Society (HFES) Annual Meeting, San Diego, CA

November 9-13, 2013

Society for Neuroscience Annual Meeting, San Diego, CA



Call Signs is an electronic newsletter published on behalf of the United States Naval Aerospace Experimental Psychology Society (USNAEPS).

Postmaster: LT Stephen Eggan
 Naval Medical Research Unit-Dayton
 2624 Q Street, Bldg 851, Area B
 Wright Patterson AFB, OH 45433-7955

Published two times annually with a biennial Summer Supplemental.
 Send articles to the address above or via email to the editor, stephen.eggan@wpafb.af.mil